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ENTERED AT NEW YORK POST OFFICE, AS SECOND CLASS MATTER.

—“THE WILD FLOWERS OF AMERICA.”—

The Greatest Success of the Times.

It's only a few days since the first of the Portfolios of "Wild Flowers of America" was ready for distribution and yet its reception seems already as if the whole nation was singing its praises. From College Presidents, Botanical Professors—teachers of all kinds, Senators, Congressmen, Lawyers, Doctors, Students and the great mass of thinking people, letters of the warmest commendation are pouring in, filling the mails, and constituting at once a demonstration rarely, if ever, approached in the history of popular publications in America. From the mass of letters we publish a few, selecting mostly those of college graduates and others whose actual experience makes them judges of the work they are writing about. We are just as grateful for the letters and telegrams and postal cards from the tens of thousands of young women and young men, whose admiration seems boundless; and may at another time show appreciation of them.

A National Work Receives a National Testimonial.

J. HAVENS RICHARDS, President Georgetown College, West Washington, D. C.:

"The beauty and artistic excellence of the colored drawings are worthy of high praise, * * * and I am confident that by its attraction many young people will be led to undertake and pursue with the greatest pleasure a study which they might otherwise find distasteful."

J. V. COCKRILL, Congressman, Thirteenth District, Texas, Graduate of Chapel Hill College, Ex-District Judge:

"Is both beautiful and interesting."

A. C. HARMER, Congressman, Philadelphia, representing Fifth District, Pennsylvania:

"I have carefully examined Mr. Buek's works of the 'Wild Flowers of America,' and think them exquisite."

DAN WAUGH, Congressman Ninth District, Indiana, Ex-Circuit Judge, member Seventh Agricultural Committee, House of Representatives:

"I regard it an excellent work of art, which would be an adornment to any library."

CHAMP CLARK, Congressman Ninth District, Missouri, Graduate Bethany College, W. Va., Ex-President Marshall College, W. Va.

GEO. W. SMITH, Congressman Twentieth District, Illinois, Graduate McKendree College, Lebanon, Ill.:

"A valuable, beautiful and instructive book, and should be in every school-room in the land."

E. H. FUNSTON, Congressman, Second District, Kansas, Graduate Marietta College, Ohio, Ex-President State Senate:

"In my judgment, will be a most valuable acquisition to the libraries of those who love the beautiful in nature."

CHAS. H. MORGAN, Congressman, Fifteenth District, Missouri:

"Deserves and will receive the encomiums from all lovers of the beautiful, and its correctness and completeness make it one of the most valuable contributions to American literature."



— 113 —
 AMSONIA.
 AMSONIA TABERNAEMONTANA.
 MAY.



— 114 —
 TWISTED STALK.
 STREPTOPUS ROSEUS.
 MAY.

PLATE 113.

AMSONIA. AMSONIA TABERNÆMONTANA. (DOGBANE FAMILY.)

Perennial; stem one to three feet high, smooth except when quite young, terete; leaves alternate, from ovate or oblong to linear-lanceolate; flowers in a terminal cymose panicle; calyx small; corolla dull blue, salver-shaped, tube short, limb five-lobed; fruit two slender pods.



NEAR relation of the familiar dog-bane is the Amsonia, native of the Southern States, extending northward only as far as North Carolina east of the Alleghany Mountains, but coming up as far as Indiana and Missouri in the West and straying northward. It is an erect plant, rather a rank grower. The stems usually rise in clusters, in open places in woods, generally near water,—thus often telling a wayfarer that a spring is not far off. The flowers are rather small. The color is a singular pale and almost livid blue, a shade not often met with in flowers. On the whole it is rather a handsome plant, though one is more apt to think of it as odd and piquant than as pretty. The blossoms open in May or June and are succeeded by two long narrow pendant pods. The stem contains a milky juice like that of the allied family, the Milkweeds.

The flowers of the Amsonia illustrate the arithmetic which Emerson had in mind when he asked,

“Why Nature loves the number five,
And why the star-form she repeats.”

For it is true that the parts of the flower are more apt to be in fives than in any other number. There is no very apparent reason for this, unless five petals can be wrapped more cosily about the sensitive organs of the flower in the bud than four or six.

PLATE 114.

TWISTED STALK. STREPTOPUS ROSEUS. (LILY FAMILY.)

Stem tall, erect from a short rootstock, branching; leaves ovate or oblong, acute, parallel-veined, clasping at base, green on both sides, margins ciliate; flowers on slender axillary pedicels, which are bent near the middle; perianth-segments six, purplish.



IF we follow the march of the budding season, from Georgia to beyond the Great Lakes, we will find in moist mountain woods in the South and everywhere in the deep forests of the Northern parts, an odd, lily-like plant. It has forking, zig-zag stems, with a clasping, bright-green leaf at every angle. The blossoms are small. They are almost concealed by the leaves as they hang on their stalks from the under-side of the stem. In color they are pink-purple, a delicate shade. They are distinctly pretty flowers, small though they be. The peculiarity is in the stalk, which is bent or somewhat twisted, hence the significance of the plant's scientific and popular names. *Streptopus* is from two Greek words, meaning “a twisted foot.”

The flowers open in May, or, in the Southern Mountains, an exceptionally early spring brings them out in April. They are followed, in the late summer, by bright scarlet, showy berries, much more conspicuous than the blossoms. The leaves are often discolored, late in the season, by the attacks of a parasitic fungus, which gives them a striped appearance.



— 115 —
 ARIZONA WYETHIA.
 WYETHIA ARIZONICA.



— 116 —
 SMOOTH ROCK CRESS.
 ARABIS LAEVIGATA.
 MAY.

PLATE II5.

ARIZONA WYETHIA. WYETHIA ARIZONICA. (SUNFLOWER FAMILY.)

Perennial, soft-hairy; stem erect, rather stout, not above one foot high, sparingly branched; root-leaves about one foot long, elliptic or oblong, acute at both ends, with a prominent mid-rib; stem-leaves smaller, ovate, uppermost clasping; heads large, solitary at the ends of the branches; outer bracts of involucre leaf-like; rays eight to twelve, large.



EARLY in the century, when the plants of the settled portions of Eastern North America had become fairly well-known to botanists, ardent collectors began to find their way westward. The course of science is always in advance of that of empire. Ere civilization had reached the banks of the Mississippi, explorers were traversing the vast wilderness beyond. Some sought the head-waters of the Mississippi. Others ascended the muddy Missouri. Thomas Nuttall, an English botanist who came quite young to this country, was one of the most indefatigable of these pioneers. He collected extensively in Arkansas. Then, growing bolder, he joined an expedition that pushed across the continent to the Pacific. Hundreds of new plants were thus discovered. For his fellow-explorer, Nathaniel Wyeth, Nuttall named a new genus of the Sunflower Family.

Wyethia is one of the numerous genera of this family confined to Western North America. The species are mostly Californian, though some are widely distributed in the Rocky Mountains. They are rather coarse plants, with large, yellow-rayed heads and resinous juice. The large, starchy roots were eaten by the Indians. Wyethia Arizonica is found near running water in the mountains.

PLATE II6.

SMOOTH ROCK-CRESS. ARABIS LAEVIGATA. (CRESS FAMILY).

Whole plant quite smooth; root rather thick, perennial; stem erect, simple, leafy; root-leaves rosulate, on margined petioles, spatulate; stem-leaves oblong, uppermost lanceolate, clasping by an auriculate base, obscurely dentate; flowers small, white, in terminal racemes; petals four; pods long, linear.



IF we wander through the woods on some warm day in winter, when the melting snow discloses here and there the hardy leaves of Mayflower or Wintergreen, we shall find on hillsides and mossy rocks small rosettes of leaves, green above but wine-red on the under surface. This is the Rock-Cress, a common plant distributed over half the continent in the temperate zone, from the north, south to the Gulf, and westward into Minnesota. When winter has stepped from the throne of the year and blithe spring sways the sceptre, a stalk shoots up from the midst of this cluster of leaves, bearing clasping leaves and small white flowers in a wand-like cluster. The flowers are small, and have nothing of remarkable interest about them. They are succeeded by narrow pods, pods many times longer than the flowers themselves, and scythe-shaped.

The Rock-Cress—so named, of course, because of the station it often takes in clefts of rocks—belongs to a genus of rather insignificant plants widespread in the temperate zone. All have flowers much alike, small and white, or greenish. Arabis lyrata, a plant of cliffs in the Appalachian region, but growing in sandy soil near the coast, is perhaps one of the handsomest species. The flowers are larger and of a purer white than is the case with most of its kin.



— 117 —
MARSH SPEEDWELL.
VERONICA SCUTELLATA.
JUNE.



— 118 —
EARLY SAXIFRAGE.
SAXIFRAGA VIRGINIENSIS.
MAY.

PLATE II7.

MARSH SPEEDWELL. VERONICA SCUTELLATA. (FIGWORT FAMILY.)

Stems slender, creeping at base, often producing slender stolons, erect and leafy above; leaves opposite, linear-lanceolate, acute, dentate; racemes axillary, few-flowered, bracted, axis zig-zag; flowers on long, slender, spreading or reflexed pedicels; corolla small, salver-shaped; pod flattened, broader than long, two-lobed.



HAT is this plant with tiny, long-stalked flowers that grows wherever bog or ditch affords it the moisture it delights in? It is not a handsome plant, nor a conspicuous one. The small blossoms mirror the sky they gaze up to so lovingly.

We are always attracted to a flower of azure color. No matter how insignificant it may be, no matter how coarse and weed-like the stem and leaves, for a touch of the color of the sky in the blossoms, we forget the rest. That is why we love the tiny speedwells, and have made them the emblem of hope and godspeed. They have also come to signify "womanly fidelity," a quality well typified in the tender blue of the blossoms. Blue flowers are always linked in our thoughts with some high virtue. The pretty "Bluets" typify "innocence," the Harebell, "constancy," the Blue Violet, "faithfulness." Their garb is of heaven's own hue. The Marsh Speedwell is found almost throughout the North Temperate Zone. In Europe, Northern Africa, Northern Asia and North America, it is at home. Here it is found in British America and in the Northern States, from the Atlantic to the Pacific, flowering all summer. The odd little capsules are flat and deeply notched. The name *scutellata* refers to the resemblance of the fruit to a shield.

PLATE II8.

EARLY SAXIFRAGE. SAXIFRAGA VIRGINIENSIS. (SAXIFRAGE FAMILY.)

Perennial; stem erect, much-branched, hairy; root-leaves clustered at the base, on short broad petioles, rhombic-ovate or obovate, coarsely crenate, obtuse; stem-leaves much smaller, bract-like; flowers in an open, cymose panicle; petals small, white; fruit consisting of two follicles, scarcely united, spreading.



AMONG the first of "the blooms of early May,"—or, in the South, with the flowers of April—comes this little saxifrage. It loves to grow on rocks, striking its sturdy roots into their clefts, though it may often be met with in loose, sandy soil. The leaves are clustered in a pretty rosette at the base of the stem. They live through the winter, and are often purplish or wine-colored beneath. From the midst of these a bud shoots up in early spring, soon unfolding into a cluster of small, white, five-petalled blossoms. The fruit which succeeds the flower repays a moment of examination. It consists of two pods united at the base, but bending away from each other as if tugging at their fastenings and striving to get loose. The pods are tipped with the curved styles. The Early Saxifrage is common in Eastern North America, as far west as Minnesota and South to Georgia. It is comparatively rare southward, but is common in the North.

The saxifrages are very numerous, and are often exceedingly handsome plants. They belong, for the most part, to the cooler parts of the northern hemisphere, though some follow the high summits of the Andes to the southern extremity of South America.



— 119 —
HOOKED CROWFOOT.
RANUNCULUS RECURVATUS.
MAY.



— 120 —
CALLIRHOE.
CALLIRHOE INVOLUCRATA.
JUNE.

PLATE 119.

HOOKED CROWFOOT. *RANUNCULUS RECURVATUS*. (CROWFOOT FAMILY.)

Stem erect from a thickened, bulb-like base, hirsute, widely branching; leaves hairy, the lower on long petioles, the upper on short ones, three-cleft, the divisions irregularly lobed and toothed; flowers in leafy corymbs, small; sepals reflexed, longer than the pale-yellow petals; achenes long-beaked in close heads.



HE Crowfoots, which have given their name to one of the largest of plant families, are very numerous in North America. The spearworts that dwell in the marshes and the gay yellow buttercups of the meadows, are species of *Ranunculus*. So are some less showy plants that inhabit deep shades and open their pale blossoms unobserved. Among these is the Hooked Crowfoot. In May, in every fertile

"Woodside, where in little companies,
The early wild-flowers rise,"

this *Ranunculus* may be encountered. The insignificant flowers give place to a round head of seeds, each tipped with a long, curved beak. It is to the likeness of these seeds to the talons of a bird that the name *Crowfoot* refers. *Ranunculus* means "a little frog," because most of the Crowfoots and buttercups grow in bogs and ditches, where *Ranus* lifts his voice in noisy chorus.

The Crowfoot Family is an assemblage of plants of very diverse feature. The buttercups themselves, the Clematis with beautiful white or purple flowers and long-tailed fruit, the dainty Anemones, the brave little Hepatica, the rock-dwelling Columbine, the gay larkspurs, the handsome, treacherous aconite and the feathery-flowered bane-berry. are of this kindred.

PLATE 120.

CALLIRRHOE. *CALLIRRHOE INVOLUCRATA*. (MALLOW FAMILY.)

Whole plant hairy; root thickened, fusiform; stems clustered, much-branched, leafy; leaves alternate, long-petioled, deeply palmately-cleft, divisions variously lobed; stipules large and prominent; flowers large, solitary, on long peduncles, subtended by a three-leaved involucre; petals much exceeding the calyx, purple.



N the northeastern part of our continent, the Mallow Family numbers among its members few plants but weeds, introduced from Europe. True, we have the Hibiscus of river-banks and marshes, among the most gorgeous of our wild-flowers. But with this exception, our Eastern Mallows are not very handsome plants. On the western prairies, however, we may see this family in its glory. In spring, the plains are pink and white, scarlet and purple, with the blossoms of *Sidalceas* and *Sphaeralceas*, *Malvastrums* and *Callirrhoe*s.

The species of *Callirrhoe* deserve a high place among our most beautiful wild-flowers. They are queenly in their array of large pink or rose-purple blossoms. They are mostly low plants with thick roots. *Callirrhoe involucrata* is a native of the land just west of the Mississippi, ranging from Minnesota and northern reaches to Texas.

The name of the genus, *Callirrhoe*, is that of the fabled daughter of the river-god Achelous, who married Alcmaeon, the matricide, one of the famous "Seven against Thebes." It is a pretty custom, that of giving plants the names of the heroines of the beautiful Hellenic mythology. For the religion of the old Greeks, above all others, throbbed with the Spirit of Nature.

PLATE 121.

ROBIN'S PLANTAIN. ERIGERON BELLIDIFOLIUS. (SUNFLOWER FAMILY.)

Perennial, with a short rootstock, forming offsets after flowering, hairy; stem erect, a foot or two high, leafy below; root-leaves obovate or spatulate, petioled; stem-leaves oblong-spatulate to lanceolate, clasping; heads few, large; rays numerous, white or pale blue.

"Of all the flowers in the mede,
Them love I most these floures white and rede
Such that men callen Daisies in our town,
To them I have so great affection,
As I sayd erst, when comen is the Maie."



THE pretty little English daisy, *Bellis perennis*, sung by the gentle-souled Chaucer so long ago, is not found in North America. But a nearly allied species, *Bellis integrifolia*, sometimes known as the "Western Daisy," is native in the Southwestern States, coming as far towards the northeast as Central Kentucky.

A common plant in the eastern part of the continent is *Erigeron bellidifolius*, so named from the resemblance of its leaves to those of the true daisy. It grows in thickets and on rocky hillsides, preferring dry soil. The blossoms open in April and May.

The heads are large, with yellow disk-flowers and many narrow, white, pinkish or bluish rays.

The significance of the name by which it is popularly known, "Robin's Plantain," is not quite obvious. Perchance the resemblance of the leaves in shape to those of the common rib-wort or plantain, and the time of flowering, when the robins sing loudest, will explain the odd title.

PLATE 122.

GRASS OF PARNASSUS. PARNASSIA CAROLINIANA. (SAXIFRAGE FAMILY.)

Whole plant smooth; stems clustered, erect from a creeping rootstock, scapose; root-leaves on slender petioles, ovate, obtuse, truncate or subcordate at base, thickish; stem-leaf solitary, clasping; flowers solitary, terminating the stems; petals five, yellowish-white, veiny; perfect stamens five, sterile stamens fifteen.



DEDICATED as it is to the abode of the muses, the Grass of Parnassus should be the poet's own flower. Yet this beautiful plant, that would lend itself readily to verse and song, has been less praised than many an unlovely or uninteresting flower. It is a singularly elegant plant, rising out of the rich, moist soil like a naiad from her mossy couch. The luscious green of the smooth leaves, the large blossoms crowning the almost bare stems, their white petals delicately nerved with greenish-yellow,—what could be more exquisitely lovely? *Parnassia caroliniana* is frequent from Canada to Florida and west to Texas. The flowers open in early summer.

No family numbers more interesting and beautiful plants among its members than does the Saxifrage Family. Beside the Grass of Parnassus, this group contains the currants and gooseberries with their tart, delightful fruits, the showy Hydrangeas, the delicate little mitrewort, the splendid Mock-Orange, the Japanese Deutzias, so much cultivated, and the curious alum-roots. Except the species of *Ribes*,—gooseberries and currants,—none of our representatives of this family are of economic value. It is for their elegant beauty that we prize them.



— 121 —
 ROBIN'S PLANTAIN.
ERIGERON BELLIDIFOLIUS.
 MAY.



— 122 —
 GRASS OF PARNASSUS.
PARNASSIA CAROLINIANA.
 JUNE.

PLATE 123.

THISTLE. *CARDUUS (CNICUS) DISCOLOR.* (SUNFLOWER FAMILY.)

Stem erect, rather stout, sometimes six feet high, branching; root-leaves large, stem-leaves smaller, all pinnately parted or divided; segments lobed and toothed, the teeth spine-tipped, green above, white-tomentose beneath; heads rather large; involucre much imbricated, bracts tipped with spines; flowers numerous, purple.

FAMOUS plants are the thistles, yet opinion differs in regard to them. Some of us consider only their weed-like habit and their bristling armor of spines, pronouncing them the most noisome of soil-thieves. Others look at them from the æsthetic standpoint, and find great beauty in the heads of purple flowers and the plumed seeds. The thistle was the emblem of Scotch nationality,—noble and kindly within, but resolute to withstand aggression without. In the language of flowers it signifies “austerity.” This quality is its outer garment. At heart it is gentle.

Carduus discolor is the showiest of our eastern thistles. It is a conspicuous object in the open fields where it oftenest grows. In early summer clumps of large root-leaves, whitened like a miller’s coat beneath, mark where soon the tall stems shall rise. These bear numerous heads of flowers. As the spring leaves protect the stem, so the blossoms are safely guarded by the bell-shaped involucre of many firm leaves, overlapping each other like shingles on a roof. Each is tipped with a sharp, spreading spine. The thistles are well-protected against most herbivorous animals, tempting them with their display of sappy green leaves and stem, only to repulse them with their formidable array of spines.

PLATE 124.

GOLD THREAD. *COPTIS TRIFOLIA.* (CROWFOOT FAMILY.)

Smooth, acaulescent perennial, with a slender, creeping rootstock; leaves on long, slender petioles, ternate, leaflets broadly wedge-shaped, lobed and dentate, veiny; flowers solitary, on peduncles usually exceeding the leaves; sepals white; petals much smaller; stamens numerous; pods on spreading stipes, long-beaked with the style.

IN the happy May-time, while we roam through grassy meadows where the patient, soft-eyed cows stand knee-deep in herbage, or search leafy woodland or mossy bog—

“Glad as the golden spring to greet
Its first live leaflet’s play”—

we shall find a little white-flowered, shiny-leaved plant, hiding in deep, cool woods and swamps. This is the Gold-Thread. We wonder at the name, seeing only green leaves and snowy blossoms. But if we scrape away the sphagnum or dead leaves amid which it grows, we shall learn the answer to the riddle. The slender, creeping rootstock is bright yellow, and looks like a bit of golden wire, lost in the moss. A delicate little plant it is, shy and shrinking. It is a European flower, as well as native here. With us it is wide-spread in British America and the northernmost States. Occasionally it is met with in “bear-wallows” on mountain-tops, as far south as North Carolina and Tennessee. *Coptis* means *cut*, the name being given these plants because of the divided leaves.

Yellow-colored roots are of common occurrence in the Crowfoot Family. Some of the meadow-rues have them. They have given names to the Golden-Seal and the Shrub Yellow-root.



— 123 —
THISTLE.
CARDUUS (CNICUS) DISCOLOR.
 JULY.



— 124 —
GOLD THREAD.
COPTIS TRIFOLIA.
 MAY.

PLATE 125.

ARETHUSA. ARETHUSA BULBOSA. (ORCHIS FAMILY.)

Quite smooth; stem erect from a small, round corm, low, simple; leaves consisting of sheathing, membranaceous scales, except one, which is long, linear and grass-like; flower solitary, terminating the stem, large, rose-purple; lip partly pendulous, spotted, crested with hairs.

"June 2, 1853.—Arethusas are abundant in what I may call Arethusa meadow. They are the more striking for growing in such green localities in meadows, where the brilliant purple, more or less red, contrasts with the green grass."—*Thoreau*.



If a flower combines decided individuality of form with grace and beauty and exquisite fragrance, it has all that a flower can have. All these qualities are united in Arethusa. It is unsurpassed among our wild-flowers. We find it in moist meadows, where the grass has a tenderness, and at the same time, a brilliancy of color not elsewhere seen. It is a low plant. The stem bears several scales, and a single long, narrow leaf. At the summit nods the solitary flower. Occasionally there are two blossoms on the same plant. The color is a rich purple. The hanging lip is bearded with a fringe of pinkish hairs, and is somewhat spotted with deeper color. Arethusa often grows with its cousins, Calopogon and the Snake-Mouthed Pogonia. Its color is richer, a true purple. They have blossoms more nearly roseate.

Arethusa was a beautiful nymph, beloved of Apollo. To escape the attentions of the god of day, she was transformed into a fountain.

PLATE 126.

THORN-APPLE. JIMSON WEED. DATURA STRAMONIUM. (NIGHT-SHADE FAMILY.)

Smooth, succulent annual; stem erect, bushy-branched, leafy; leaves alternate or sub-opposite, long-petioled, coarsely sinuate-toothed, broadly ovate; flowers on very short peduncles, in the forks of the stem; calyx tubular, five-toothed; corolla tubular-funnel-form, limb five-toothed, white; capsule spiny.



WHEN the early colonists of Virginia established their first settlement, they named it Jamestown, in honor of their King. One of the first of Old World weeds to follow them to their home in the wilderness was the Thorn-Apple. Struck with the blazonry of this plant, the sturdy pioneers of the Old Dominion dignified it with the name of Jamestown-Weed. With the true American fondness for contractions, this has been shortened to Jimson-Weed, which name it bears to this day.

Datura Stramonium is supposed to have come originally from Southern Asia, but is now well naturalized in most warm climates. It is a common weed in North America. The large white flowers open at sunset in every barn-yard and bit of wasteland. The blossoms, and, for that matter, the whole plant, exhales a rank, disagreeable odor. It is reputed to be poisonous. The seeds are said to have been eaten by children with fatal results. They are contained in a globular capsule covered with prickles, hence the name "Thorn Apple."

A species nearly related to the Thorn-Apple is Datura Tatula, a South American plant growing wild along our Atlantic sea-board and in the Southern States. It has lilac-purple flowers and purplish stems.



— 125 —
ARETHUSA.
ARETHUSA BULBOSA.
MAY.



— 126 —
THORN-APPLE, JIMSON WEED.
DATURA STRAMONIUM.
JULY

PLATE 127.

TOAD-FLAX, BUTTER-AND-EGGS. LINARIA LINARIA (VULGARIS.) (FIGWORT FAMILY.)

Smooth and somewhat glaucous perennial; stem erect, leafy, simple or branching; leaves alternate, short-petioled, linear, acute at both ends; flowers numerous, in long, terminal racemes; corolla two-lipped, spurred, with the throat closed by a palate, orange and yellow.



ONE of the prettiest of weeds is the Toad-Flax. It is a common plant of our waste-ground and waysides introduced from Europe. The stems are very leafy, fairly shaggy with leaves. These are narrow and rather pale. The showy flowers are in long, spike-like clusters. The corolla is pale-yellow, with an orange-colored palate. Hence the appropriate, if not altogether romantic name of "Butter-and-Eggs."

Thoreau writes of it,—"*Linaria vulgaris*, Butter-and-Eggs, Toad-Flax, was seen the 19th of June. It is rather rich-colored, with a not disagreeable scent. It is called a troublesome weed. Flowers must not be too profuse and obtrusive, else they acquire the reputation of weeds. It grows almost like a cotton-grass, so above and distinct from its leaves, in wandering patches higher and higher up the hill."

While the blossom of the Toad-Flax is ordinarily irregular, it sometimes happens that an almost regular, five-lobed corolla is produced. It is one of the best-known cases, in plants, of return to an ancestral type.

The *Linaria* is fertilized by bees. The palate is pressed down by the weight of these insects, whereas, such as have lighter bodies, butterflies, for example, are refused admittance.

PLATE 128.

RED RATTLE PEDICULARIS PALUSTRIS WLASSOVIANA. (FIGWORT FAMILY.)

Stem smooth, erect, branching, leafy; leaves alternate, short-petioled, pinnatifid, segments linear, toothed; flowers in short, spike-like racemes at the ends of the branches; calyx short-tubular, two-cleft; corolla erect, tubular, labiate, upper lip helmet-shaped, lower broad and flat.



COMMON plant of bogs and moist meadows in Europe is *Pedicularis palustris*. It is known as Red Rattle among the country folk of England, because the ripe seeds rattle in the pods. We have not the typical *Pedicularis palustris* in this country; but a variety, named after the Russian botanist Wlassov, is found about Hudson's Bay, and southwestward to Oregon. It is an erect, branching plant, with cut leaves and numerous flowers. These are reddish-purple in color, and two-lipped. The lower lip is broad and pendant, while the upper is erect and arched at top, somewhat like the mediæval helmet. It wants the conspicuous beak of some other kinds of Lousewort.

The numerous species of *Pedicularis* are nearly all found in Arctic or Subartic regions, or on high mountains. These plants are suspected of preying upon the roots of other plants, but this has not been definitely established. A number of closely-allied plants of this family are known to be partly parasitic, like the Cow-wheat (*Melampyrum*). They all have green leaves, however, and are not entirely dependent on other plants for their living, as are the allied family, the Broomrapes. These have the leaves reduced to mere scales, and are destitute of green color.



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TOAD-FLAX, BUTTER-AND-EGGS.

LINARIA. LINARIA VULGARIS.

JUNE.



— 128 —

RED RATTLE.

PEDICULARIS PALUSTRIS WLASSOVIANA.

MAY.

W. H. HATCH, Congressman, First District, Missouri, Chairman Committee of Agriculture, House of Representatives, Washington, Representative for sixteen years, Bloomington, Ill.:

"Have no doubt that the book will be valuable as a text-book, and that it will go far toward the development of a love for the beautiful."

We fully concur in the above:

B. F. FUNK, Congressman, Fourteenth District, Illinois, Graduate Wesleyan University, Ex-Mayor Bloomington.

JAS. W. MARSHALL, Congressman, Ninth District, Virginia, Graduate Roanoke College.

JNO. DAVIS, Congressman, Fifth District, Kansas, Graduate Illinois College, one of the founders of the Agricultural College, Kansas.

S. B. ALEXANDER, Congressman, Sixth District, North Carolina, Graduate University of North Carolina, Member of the Agricultural Committee of the House of Representatives, Member State Board of Agriculture.

H. M. BAKER, Congressman, Second District, New Hampshire, Graduate of Dartmouth College, Ex-State Senator, Ex-Judge Advocate-General of New Hampshire.

J. STERLING MORTON, Secretary of Agriculture of President Cleveland's Cabinet:

"I fully agree with the above, and could not do otherwise after seeing the illustrations."

JNO. S. WILLIAMS, Congressman, Fifth District, Mississippi, Graduate University of the South, Graduate University of Virginia, Graduate University of Heidelberg, Germany:

"Is one of the best things I have seen, and the illustrations of American plants and flowers, as well as the descriptions, are most complete."

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